

IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF CALIFORNIA

ORACLE AMERICA, INC.,

No. C 10-03561 WHA

Plaintiff,

**SUPPLEMENTAL CLAIM  
CONSTRUCTION ORDER**

v.

GOOGLE INC.,

Defendant.

**INTRODUCTION**

In this patent and copyright infringement action, the parties seek supplemental construction of three phrases from the asserted patents. After consideration of the briefing from both sides, final constructions for two of the three phrases are set forth below.

**STATEMENT**

The technical background was set forth in the first claim construction order in May 2011 (Dkt. No. 137). The first claim construction order construed five of six requested terms. After the number of asserted claims was reduced, the Court invited the parties to list additional terms in dispute (Dkt. No. 603). The parties now request construction of three phrases. This order follows opening and reply briefs from both sides.

**ANALYSIS**

Courts must determine the meaning of disputed claim terms from the perspective of a

1 person of ordinary skill in the pertinent art at the time the patent was filed. *Chamberlain Group,*  
2 *Inc. v. Lear Corp.*, 516 F.3d 1331, 1335 (Fed. Cir. 2008). While claim terms are generally given  
3 their ordinary and customary meaning, the patent's specification is always highly relevant to the  
4 claim construction analysis. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–15 (Fed. Cir. 2005).  
5 Although courts have discretion to consider extrinsic evidence, including dictionaries, scientific  
6 treatises, and testimony from experts and inventors, such evidence is “less significant than the  
7 intrinsic record in determining the legally operative meaning of claim language.” *Phillips*, 415  
8 F.3d at 1317–18.

9 While this order acknowledges that the parties have a right to a ruling on all disputed  
10 claim terms by the time the jury instructions are settled, the Court will reserve the authority, on its  
11 own motion, to modify the constructions in this order if further evidence — intrinsic or  
12 extrinsic — warrants such a modification. Given that claim construction is not a purely legal  
13 matter, but is (as the Supreme Court describes it) a “mongrel practice” with “evidentiary  
14 underpinnings,” it is entirely appropriate for the Court to adjust its construction of claims if the  
15 evidence compels an alternative construction. *Markman*, 517 U.S. at 378, 390. The parties  
16 should be aware, however, that they are *not* invited to ask for reconsideration of the constructions  
17 herein. Motions for reconsideration may be made only in strict accordance with the rules of  
18 procedure, if at all.

19 **1. THE '476 PATENT: “COMPUTER-READABLE MEDIUM.”**

20 The '476 patent, entitled “Controlling Access to a Resource,” was issued in February  
21 2001. The invention generally related to a dynamic security method for determining appropriate  
22 access privileges. While this could have been practiced on a personal computer, embodiments of  
23 the invention were not limited to any specific combination of hardware circuitry and software  
24 (col. 5:2–3).

25 Only independent claim 14 is asserted. The phrase construed by this order is italicized  
26 below. Claim 14 covered (col. 19:59–20:5):

- 27 14. *A computer-readable medium bearing*  
28 *instructions for providing security, the*  
*instructions including instructions for*  
*performing the steps of:*

detecting when a request for an action is made by a principal;

determining whether said action is authorized based on an association between permissions and a plurality of routines in a calling hierarchy associated with said principal;

wherein each routine of said plurality of routines is associated with a class;

and wherein said association between permissions and said plurality of routines is based on a second association between classes and protection domains.

This is the parties' second request to construe "computer-readable medium." During the first claim construction proceedings, the parties sought to construe this phrase and all related phrases appearing in six different patents. The first claim construction order refused to do so because the patents were too heterogenous: the issue dates spanned a decade and patented subject matter ranged from security and access protections to loading and processing techniques. The order held that construing the phrase would require individualized attention to the intrinsic evidence of each patent. Now, the parties only seek to construe the phrase as used in the '476 patent.

The parties' proposed constructions are shown below.

**ORACLE'S PROPOSED  
CONSTRUCTION**

**GOOGLE'S PROPOSED  
CONSTRUCTION**

A storage device for use by a computer

Any medium that participates in providing instructions to a processor for execution, including but not limited to, optical or magnetic disks, dynamic memory, coaxial cables, copper wire, fiber optics, acoustic or light waves, radio-waves and infra-red data communications

The construction of "computer-readable medium" is relevant to the parties' invalidity arguments. Oracle and Google agree that "computer-readable medium" encompassed *storage* media. The dispute is whether it also encompassed *transmission* media, such as coaxial cables and fiber

1 optics that only contain transitory data signals. This order finds that “computer-readable  
2 medium” did encompass transmission media.

3 In the specification, “computer-readable medium” was explicitly defined as:

4 The term “computer-readable medium” as used herein refers  
5 to any medium that participates in providing instructions to  
6 processor for execution. Such a medium may take many  
7 forms, *including* but not limited to, non-volatile media,  
8 volatile media, and *transmission media*. Non-volatile media  
9 includes, for example, optical or magnetic disks, such as  
10 storage device. Volatile media includes dynamic memory,  
11 such as main memory. *Transmission media includes coaxial*  
12 *cables, copper wire and fiber optics, including the wires*  
13 *that comprise bus*. Transmission media can also take the  
14 *form of acoustic or light waves*, such as those generated  
15 during radio-wave and infra-red data communications.

16 (col. 5:4–16) (emphasis added). This explicit definition of “computer-readable medium” would  
17 have been persuasive to a person of ordinary skill. The claim drafter acted as his own  
18 lexicographer when he expressly defined the phrase. Indeed, quotation marks were used around  
19 the phrase “computer-readable medium,” a strong indication that what followed was a definition.  
20 *Sinorgchem Co. v. ITC*, 511 F.3d 1132, 1136 (Fed. Cir. 2007).

21 In addition to this explicit definition, the specification described embodiments that  
22 unambiguously included transmission media, such as wireless signals. For example, the  
23 specification described the use of an infra-red transmitter as a medium (col. 5:32–35), and the use  
24 of wireless links to send and receive signals (col. 5:52–56).

25 Against the explicit definition and described embodiments, Oracle argues the often-quoted  
26 point, “claims should be so construed, if possible, as to sustain their validity.” *Rhine v. Casio,*  
27 *Inc.*, 183 F.3d 1342, 1345 (Fed. Cir. 1999). This argument is unpersuasive because there was no  
28 ambiguity in the specification’s definition. The only construction that is consistent with the  
language of the patent is a “computer-readable medium” that included transmission media.

Oracle’s citations to extrinsic dictionaries are also unpersuasive. Oracle argues that  
because some contemporaneous technical dictionaries defined “media” as physical materials and  
storage devices, the phrase “computer-readable medium” must have only included storage media.  
Extrinsic sources, however, cannot be used to contradict claim meaning that is unambiguous in  
light of intrinsic evidence. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1324 (Fed. Cir. 2005).

1 Oracle also makes a grammatical argument. It argues that the word “may” in the  
2 definition paragraph meant that transmission media should have been treated as a disclosed but  
3 unclaimed embodiment. A person skilled in the art would not have read the specification’s  
4 definition that way. The sentence explained that computer-readable “medium may have taken  
5 many forms.” And the next phrase explicitly included transmission media in the definition of the  
6 medium: “*including* but not limited to . . . transmission media.”

7 Finally, Oracle also makes a policy argument that the construction of “computer-readable  
8 medium” presents a larger issue than just this action. Oracle rhetorically asks: since the Federal  
9 Circuit has arguably interpreted the law to invalidate claims encompassing both storage media  
10 and transmission media, “what shall courts do with the thousands of patents issued in the past  
11 decade that have [relied on a prior interpretation]?” This order does not need to reach the larger  
12 policy issue because validity has not yet been determined. Such a determination would require a  
13 broader record and additional briefing.

14 One skilled in the art would have understood that transmission media was included in the  
15 claim language. Accordingly, the phrase “computer-readable medium” shall be construed to  
16 mean “any medium that participates in providing instructions to processor for execution,  
17 including but not limited to, transmission media.”

18 Importantly, this construction of “computer-readable medium” only applies to the ’476  
19 patent and does not apply to the other asserted patents.

## 20 2. THE ’205 PATENT: “AT RUNTIME.”

21 The ’205 patent, entitled “Intrepreting Functions Utilizing a Hybrid of Virtual and Native  
22 Machine Instructions,” was issued in June 2005. The ’205 patent generally related to increasing  
23 execution speed by replacing bytecode with instructions to access faster native code.

24 Two claims from this patent are asserted: independent claim 1, and its dependent claim 2.  
25 The disputed phrase appeared only in text of claim 1. The disputed phrase is italicized below.  
26 Claim 1 covered (col. 13:43–53):

27 1. In a computer system, a method for increasing the  
28 execution speed of virtual machine instructions *at*  
*runtime*, the method comprising:

receiving a first virtual machine instruction;

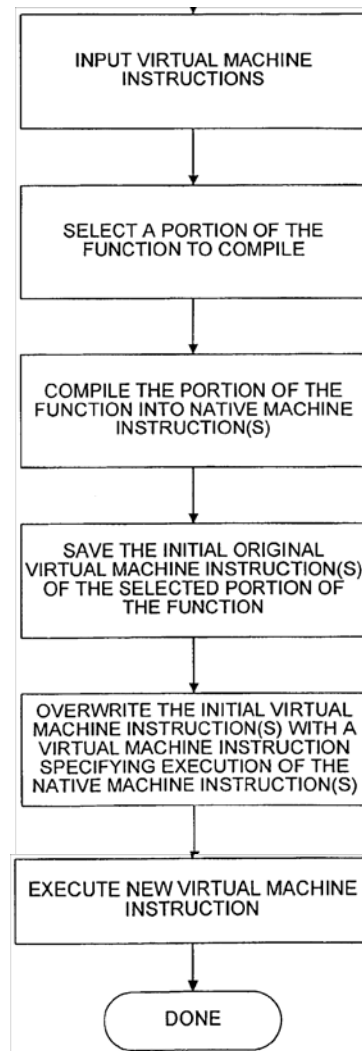
generating, *at runtime*, a new virtual machine instruction that represents or references one or more native instructions that can be executed instead of said first virtual machine instruction; and

executing said new virtual machine instruction instead of said first virtual machine instruction.

The phrase “at runtime” appeared twice in claim 1, once in the preamble and once in the body.

Illustrated below is a graphic representation of the claimed steps:

Figures 4 and 6 from the '205 Patent: Claimed Method



The parties' proposed constructions are shown below.

**ORACLE'S PROPOSED  
CONSTRUCTION**

**GOOGLE'S PROPOSED  
CONSTRUCTION**

No construction necessary. The ordinary meaning is "during execution of the virtual machine."

"during execution of the virtual machine instructions"

The construction of "at runtime" is relevant to the parties' non-infringement arguments. The parties agree that "at runtime" included during the time that the virtual machine was running. The parties dispute whether runtime *only* encompassed the narrower period during execution of virtual machine *instructions*. Put another way, the dispute is whether the virtual machine has to be executing instructions or just up-and-running (without executing instructions) when a "new virtual machine instruction" was generated. This order finds that a person of ordinary skill would have understood that the generation step had to have occurred during execution of virtual machine instructions.

Oracle's definition of "at runtime" would render the phrase meaningless. If "at runtime" meant any time during which the virtual machine was up-and-running, then the claimed generation step would not have any *additional* limitations relative to the other steps in the claim: receiving and executing. The asserted claim outlined three steps to be performed in a virtual machine (Oracle's Opening Br. 9) (computer system is virtual machine): receiving, generating, and executing. Only the generating step has the additional limiting language of "at runtime." This would have suggested to a person of ordinary skill that the generating step *had an additional limitation* relative to the receiving and execution steps. But if Oracle's definition of "during execution of the virtual machine" were adopted, there would not have been an additional limitation for the generating step. This is because the virtual machine was *necessarily* up-and-running while it was receiving and executing. Oracle does not dispute this (Oracle's Opening Br. 9). Oracle's construction is not persuasive because it would have rendered the additional limitation of "at runtime" meaningless.

Construing "at runtime" to mean "during execution of virtual machine instructions," on the other hand, would provide meaning supported by embodiments in the specification. The only

disclosed embodiments involved generating new virtual machine instructions during execution of instructions. One embodiment was generating “go\_native” instructions. The go\_native instruction was a preferred embodiment of a new virtual machine instruction (col. 7:23–26). The go\_native instruction was generated whenever the virtual machine decided to substitute a sequence of bytecodes with native machine instructions called “snippets” (col. 6:26–30, 7:49–57). The specification was clear that this process occurred during execution of virtual machine instructions (col. 9:30–34, 7:49–51).

Another embodiment was generating new virtual machine instructions during Java virtual machine initialization, which also involved the execution of virtual machine instructions. New virtual machine instructions, including snippet codes, were generated along with a bytecode table during initialization (col. 13:3–26 & Figure 13). A bytecode table is illustrated below:

Figure 13 from the '205 Patent: Bytecode Table

1053 BYTECODE	1055 NAME	1057 SIZE	1059 STOP SNIPPET	1065 SNIPPET CODE SIZE	1061 PTR TO SNIPPET CODE
0	NOP	1	NO	[VARIES BY DESIGN AND NATIVE MACHINE]	...
...	...	...	...		...
178	GET_STATIC	3	NO		...
179	PUT_STATIC	3	NO		...
...	...	...	...		...
182	INVOKE_VIRTUAL	3	YES		...
183	INVOKE_SPECIAL	3	YES		...
184	INVOKE_STATIC	3	YES		...
185	INVOKE_INTERFACE	5	YES		...
...	...	...	...		...
202	GO_NATIVE	3	YES		...
...	...	...	...		...

1063 TEMPLATE TABLE (SNIPPET CODE)
TEMPLATE
TEMPLATE
...
TEMPLATE
...
TEMPLATE

Although the parties dispute whether initialization involved the execution of virtual machine instructions, this order finds that a person of ordinary skill would have understood that instructions were executed during initialization. There were many tasks the Java virtual machine



performed during initialization, such as class loading and class initialization. The process of class loading and class initialization involved the execution of virtual machine instructions. Class loading was done by executing virtual machine instructions found in a ClassLoader file, which was written in the Java programming language (Fenton Decl. Exh. B). Similarly, the process for class initialization was done by executing virtual machine instructions in the form of bytecode (US Patent 6,061,520). Oracle disputes this. However, its supporting citations did not discuss whether virtual machine instructions were executed during initialization. Instead, the citations only addressed the general process of class loading and class initialization, which, as discussed, involved the execution of virtual machine instructions.

Oracle's argues that construing "at runtime" to "during execution of *the* virtual machine instructions" would be illogical because of the definite article 'the' in the construction. Put another way, Oracle argues that it would be unclear which virtual machine instructions were being referenced. This order agrees. The reference could not have been to the first virtual machine instructions because those instructions may never have been executed. And referring to the new virtual machine instructions would be illogical because those instructions are executed at a *later* step in the claimed method. This order finds that a definite article is unnecessary and confusing.

Accordingly, the phrase "at runtime" shall be construed to mean "during execution of one or more virtual machine instructions."

**3. THE '720 PATENT: "OBTAIN[ING] A REPRESENTATION OF AT LEAST ONE CLASS FROM A SOURCE DEFINITION PROVIDED AS OBJECT ORIENTED PROGRAM CODE."**

The '720 patent, entitled "System and Method for Dynamic Preloading of Classes through Memory Space Cloning of a Master Runtime System Process," was issued in September 2008. The '720 patent improved efficiency by dynamic preloading of classes through memory space cloning. Six claims from this patent are asserted: independent claims 1 and 10, and their dependent claims: 6, 19, 21, and 22. The disputed phrase is found in both independent claims. The parties' proposed constructions of "obtain[ing] a representation of at least one class from a source definition provided as object oriented program code" are shown below.

**ORACLE'S PROPOSED  
CONSTRUCTION**

**GOOGLE'S PROPOSED  
CONSTRUCTION**

No construction necessary. The phrase has the ordinary meaning that its constituent words give it.

load at least one class definition by compiling object oriented source code.

The main dispute is whether "a source definition" in the obtaining step referred to source code, object code (bytecode or machine code), or either. Google argues for source code, while Oracle argues that the "source definition" can be either source code or object code.

The record evidence does not illuminate the precise meaning of that phrase to a person of ordinary skill in the pertinent art at the time the patent was filed. If construction of the phrase proves necessary, it will be construed before the jury is charged at the end of the trial, and its construction will be based upon a more fully developed record.

**CONCLUSION**

For the reasons provided herein, the constructions set forth above will apply in this dispute. The Court will reserve the authority, on its own motion, to modify these constructions if further evidence warrants such a modification. Counsel, however, may not ask for modification.

**IT IS SO ORDERED.**

Dated: January 25, 2012.

  
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WILLIAM ALSUP  
UNITED STATES DISTRICT JUDGE